

SECTION III

TECHNOLOGY AND MILITARY ADVANCEMENTS

This final section of the Report assesses China's rapid advances in technology development, military modernization, and media control. These advancements are altering bilateral and regional trade flows, the cross-Strait military balance, and, in the case of media control, the Chinese government's ability to shape perceptions of the United States and its policies.

Chapter 7 reviews the Chinese government's coordinated strategy for directing national and foreign investment into high-tech research, development and production. China's policies for attracting and directing high-tech investment have been a sustained, multiyear effort that has paid dividends for economic growth, science and technology institutions, educational infrastructure, technical levels of workers and industries, and military modernization. The United States and other foreign partners—both commercial and governmental—have contributed significantly to these developments. U.S. advanced technology and technological expertise is transferred to China in a number of ways, both legal and illegal, including through U.S. invested firms and research centers in China, Chinese investments in the United States, bilateral science and technology (S&T) cooperative programs, and Chinese students and researchers who return home following their work and study at U.S. universities and research institutes.

The U.S. government's collection of data on the shifts of U.S. high-tech investment, technology transfers, and R&D to China is inadequate. Information on U.S. transfers of technology subject to export licensing is compiled and government reporting on official S&T cooperation efforts has improved somewhat under Congressional mandate; but the overall picture of U.S. contributions to the development of China's technology growth and R&D base is not at all clear. Assessments of the implications of these shifts for the United States' longer-term technological superiority and for China's competitiveness—both commercially and militarily—are difficult to make as a result of this gap in knowledge.

In Chapter 8, the Commission reviews China's military modernization programs. Commission research and hearings indicate that China's military capabilities increasingly appear to be shaped to fit a Taiwan conflict scenario and to target U.S. air and naval forces that could become involved. China's modern arsenal includes an increasingly sophisticated nuclear missile force that is of direct strategic concern to the United States, while in the Western Pacific theater China has deployed over five hundred conventional short-range ballistic missiles that threaten Taiwan and longer-range conventional missiles that could threaten Japan and U.S. forces de-

ployed in the region. China's advanced naval and air weapons systems—including surface ships, submarines, antiship missiles, and advanced fighter aircraft—have been significantly enhanced by infusions of foreign military technology, coproduction assistance, and direct purchases, mainly from Russia and, to a lesser extent, from Israel.

Chapter 8 further considers the implications of these quantitative and qualitative military advancements for Taiwan, for the United States, and for cross-Strait relations. There is a discussion of developments in Taiwan's own defense establishment and of Taiwan's current and future defense needs in response to China's progress. Building on themes introduced in Chapter 4, China's Regional Economic and Security Impacts, this chapter confirms the importance of Congress maintaining its key oversight role in assessing Taiwan's defense needs under the Taiwan Relations Act and urges closer coordination between the administration and Congress on this matter.

In Chapter 9, the Report examines how the Chinese government continues to exercise strong controls on the dissemination of information via the public media. While there has been some loosening of controls on reporting of news relating to many areas of business and society in China, red lines remain that are dangerous for individuals or organizations to exceed.

Both for control and command purposes, the Chinese government's propaganda machinery has not withered away during twenty-five years of reform and opening; rather it has modernized. This was proven beyond doubt during the SARS epidemic of 2003. The Chinese government's intensive efforts to cover up the outbreak of SARS showed the breadth of the government's control, while the ability of many in the population to nonetheless access information about the epidemic via the Internet, text messaging, and other new media demonstrated the limitations of this control in a growing high-tech society.

Commission research, including findings of a public hearing on the subject, leads to the conclusion that the government's temporary reversal of policy to encourage accurate reporting of SARS developments did not herald a fundamental change in the Chinese government's approach to controlling the media, including information available through the Internet. The government's shift on SARS occurred primarily in response to international alarms after the outbreak had crossed national boundaries and became prominent in foreign press accounts.

Government censorship; jamming of some overseas broadcasts, including those of U.S. government-sponsored outlets like the Voice of America; blocking of foreign and domestic Internet Web sites; and punishments for those who disseminate information beyond the government's tolerance remain widespread. Open criticism of China's leaders, questioning of the Communist Party and its policies, organizational activities that are independent of government control, and anything perceived as conducive to political conduct remain taboo in the public media.

Together, these three final chapters remind us of the state-directed nature of China's growing economic, political, and military power. China channels high-technology research and development

to benefit China's defense industrial base; it directs military modernization toward coercion of Taiwan and deterrence of the United States; and it controls and uses the media to shape support for its policies and perceptions toward the United States.

CHAPTER 7

CHINA'S HIGH-TECHNOLOGY DEVELOPMENT AND U.S.-CHINA SCIENCE AND TECHNOLOGY COOPERATION

“ECONOMIC REFORMS AND UNITED STATES ECONOMIC TRANSFERS. *The Commission shall analyze and assess ... the relocation of high-technology ... and R&D facilities; [and] the impact of these transfers on United States national security ...”* [P.L. 108–7 Division P, Sec. 2(c)(2)(B)]

“UNITED STATES-CHINA BILATERAL PROGRAMS. *The Commission shall assess science and technology programs to evaluate if the United States is developing an adequate coordinating mechanism with appropriate review by the intelligence community with Congress; [and] assess the degree of non-compliance by China and United States-China agreements on ... intellectual property rights ...”* [P.L. 108–7, Division P, Sec. 2(c)(2)(G)]

KEY FINDINGS

- The Chinese government has a coordinated, sustainable vision for science and technology development. Many Chinese high-technology developments have been spurred by policies the Chinese government has instituted to accelerate the growth of industries in this sector, which the government believes can help lift the whole economy.
- The Chinese government uses foreign investment, tax policies, subsidies, technology standards, and industry regulation to accelerate the nation's technological growth. It uses government procurement and proprietary technology standards to advance its technology growth policies. These policies make it difficult, if not impossible, to achieve a level playing field in this area of U.S.-China trade.
- Global production networks dominate China's high-tech export environment. Foreign investment into China has provided capital, management, and technology to Chinese production in various technology sectors. Taiwan firms are key investors and intermediaries in China's high-tech production networks.
- U.S. trade and investment with China has played, and continues to play, a key role in China's technological advancement. U.S. advanced technology and technological expertise is transferred to China, through both legal and illegal means, via U.S. invested firms and research centers in China, Chinese investments in the United States, bilateral science and technology (S&T) cooperative programs, and the tens of thousands of Chinese students and re-

searchers at U.S. universities and research institutes who return to China after completing these programs.

- Large-scale piracy—at levels of over ninety percent—continues to characterize intellectual property rights (IPR) protection in China and is a major concern for U.S. exporters of high-tech goods and services. While the government has instituted laws to strengthen IPR protection, the enforcement of those laws has suffered from a lack of government coordination and from local protectionism and corruption.

OVERVIEW

China's technology development, including its growth as a producer of high-tech goods and services and as a center for research and development (R&D) activities is a significant component of China's overall economic development that has important implications for U.S. economic and security interests. China's technology advancements are directly related to its economic engagements with the United States and other trading partners, who have shared technology via trade, investment, government-to-government cooperative programs, and research and academic exchanges.

China has become a pivotal player in the global supply chain for high-tech goods and services and continues to receive high levels of foreign direct investment (FDI) in this sector. At the same time, foreign firms are increasingly looking at China as a cost-effective locale for conducting R&D activities as well as manufacturing, given the growing numbers and sophistication of Chinese engineers and scientists. Moreover, China's technological advancements have been bolstered by U.S.-China government-to-government science and technology cooperative programs and by the large numbers of Chinese students and researchers engaged in advanced technology work at U.S. universities and research institutes. This dynamic—the U.S. role in China's technological advancement—is significant and merits monitoring and assessment, particularly where the technologies involved may have significant implications for technological competitiveness and military applications. The U.S. government has various programs and mechanisms in place to monitor and regulate these activities, namely the S&T Cooperation Agreement, the Committee on Foreign Investments in the United States (CFIUS), and export control policy in general, but the sufficiency of these programs and mechanisms remains in question. Given the trajectory of China's technology development, it is essential that the U.S. government fully understands this development and the challenges it poses for U.S. technological competitiveness and security.

On February 12–13, 2004, the Commission held a two-day field hearing, *China as an Emerging Regional and Technology Power*, to examine China's high-tech development and its implications for the Asian region and U.S. economic and security interests. During this field hearing, held on the campus of the University of California, San Diego, the Commission heard testimony from a number of scholars and representatives of California's high-tech community on the themes of China's high-tech development programs, China's role in the global supply chain for high-tech goods and services, the

impact of China's growth in this area on Asian regional economies, and appropriate U.S. policy responses to these developments.

ANALYSIS AND FINDINGS

China's Focused High-Tech Development Strategy: Modernizing the Military and Directing FDI

The Chinese government has a coordinated, sustainable vision for science and technology development. Many Chinese high-technology developments have been spurred by policies the Chinese government has instituted to accelerate the growth of industries in this sector, which the government believes can help lift the whole economy.

Since the late 1970s, China's leaders have believed that a broad-based modernization of the whole economy will sustain long-term military modernization. "During the 16th Party Congress [2002], China's leaders reaffirmed their primary commitment to economic development and their continued support for military modernization."¹ In practice, this translates into the intersection of civilian and military technological development. For example, the Chinese Academy of Sciences conducts research with various institutions on engineering, remote sensing, semiconductors, and lasers throughout China in cities with a strong defense industrial base. As a result, there is close collaboration with the military in "applied research, with products funded or developed for use by the military."²

The PRC launched the National High Technology Research and Development Program of China (863 Program) in March 1986. Its mission is to focus on strategic, forefront, and foresighted high technology that can benefit China's long-and medium-term development.³ Major areas influenced by the 863 Program are biotechnology, space technology, information technology, laser technology, automation technology, energy technology, and advanced materials. The program was initially proposed by China's strategic weapons scientists, and its continued emphasis on "strategic civil and military technology development and its stated objective of achieving technological parity with the industrialized nations has made it, at times, a controversial prospect for foreign investment."⁴ The R&D funding for a project under the 863 Program usually comes from various channels, including government, industry, and private entities.⁵

The 863 Program has provided a more streamlined form of funding that enables the Chinese government to target specific goals through directed R&D spending. The 863 Program funds are allocated directly to 863 experts rather than through a large bureaucratic system. Thus, the government is able to fast-track its S&T priorities. For example, space technology advancements from the relevant 863 expert committees contributed to the recent success of China's manned space program.⁶ Outside of the 863 Program, official Chinese R&D funding takes place through regular S&T line items in the ministerial or state budget; block grants allocated to these entities; and through commercial fund-raising ventures established between labs and enterprises.⁷

The growth of China's domestic R&D capacity has also been bolstered by a government strategy to encourage FDI in particular areas and regions. For example, foreign computer and telecom companies established centers, programs, and labs in China, encouraged by the government's tax and other investment incentives expressly provided to entice those industries. Moreover, Chinese firms in these industries have pursued a strategy of partnering with multiple foreign firms to extrapolate the broadest array of technological capabilities from all firms involved.⁸

Foreign high-tech R&D investment in China experienced a quick transformation throughout the 1990s. From the early to mid-1990s, foreign R&D investment was best characterized as exploratory, strategic investment. During the middle of the decade, China's information technology (IT) market was opening further to foreign investment and growing increasingly competitive. In the period after China's accession into the WTO in 2001, many companies have been exploring their interests in moving up the value-added production chain and seeking a local R&D base.⁹

Dean Peter Cowhey of the University of California, San Diego, testified before the Commission that China's technological advancement currently involves a substantial pool of scientists and engineers who are focused on achieving advances in technology. When looking at China's high-tech R&D, one must take note of the speed and the depth of those advances. China thus far has demonstrated periodic spurts of technological growth in the R&D stages of development, but over the long term it will require consistent, quality growth to affect a genuine rise in the nation's technological position in the world.¹⁰ China devotes only five percent of its R&D spending to basic research, focusing the rest on applied R&D for the purpose of immediate economic development.¹¹ In addition, the development of China's R&D sector is in part hindered by the state's inability to enforce IPR protection. China's failure to protect IPR has limited investment and technology transfer decisions by some foreign firms in the technology sector.¹²

Taking the pharmaceutical industry as an example, Dr. Lee Zhong of NatureGen, Inc., testified that China is the second largest pharmaceutical ingredient manufacturer and supplier in the world, but most of this production to date has been in the generic field. To produce genuine advancement in the pharmaceutical field, the Chinese pharmaceutical industry needs to expand R&D to develop its own products, increase efficiency, and develop quality control. While products manufactured by China's pharmaceutical companies have been principally generic, foreign investment and the transfers of technology and management systems that accompany this investment are accelerating the growth of a more sophisticated pharmaceutical industry. Foreign manufacturers of pharmaceuticals are beginning to establish R&D facilities in China. The United States is the second-largest investor in the China pharmaceutical industry after Hong Kong.¹³

The biotech industry in China is also growing, and the government is supporting its development. The Commission was told by one U.S. biotech industry executive that the Chinese government was supporting its biotech industry through the annual investment of more than \$600 million into universities, research centers, and

labs and encouraging Chinese nationals who have obtained doctorates in the life sciences field in the United States to return to China by offering them incentives, such as associate professorships, to do so.¹⁴

China is also attracting R&D investment into biotechnology from Taiwan. The Commission heard testimony that while the Taiwan biotech industry is relatively strong, more investment from both the Taiwan government and the private sector is now going to the mainland. This investment, in combination with Beijing's own investment in biotech, has allowed China's biotech industry to grow upwards of thirty percent a year, and the rate is increasing, while Taiwan's biotech industry has grown about twenty-five percent annually over the last five years and is slowing down.¹⁵

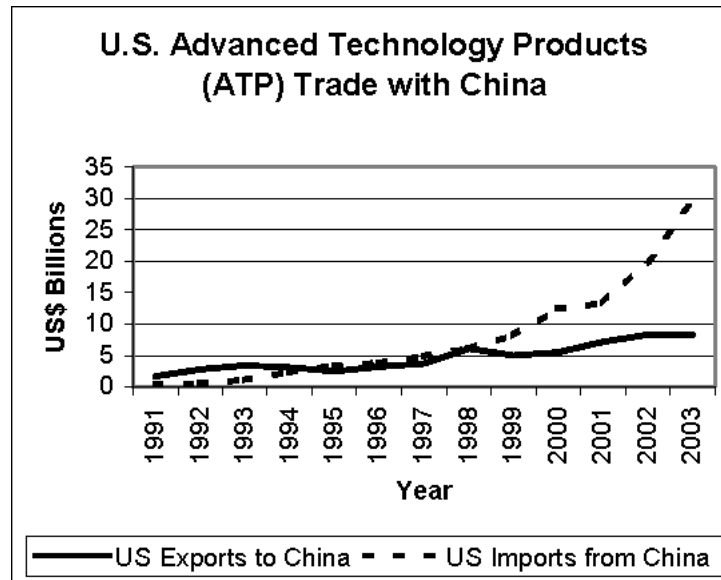
The Chinese government plays a large role in China's high-tech development, and its technology policy utilizes standards as leverage to build the industry as a whole. Dean Cowhey testified that China has "employed proprietary technology standards to shift the terms of competition in favor of Chinese technology."¹⁶ If foreign companies adopt Chinese-promulgated standards to get access to the growing Chinese market, they help build economies of scale, which then encourages the growth of exports out of China with these new standards. The Chinese government also uses its power over state-owned enterprises (SOE) and over companies that require licenses to produce or provide services, to organize bargaining cartels with foreign corporations to encourage technology transfers into China.¹⁷ This use of proprietary technology standards has become a new means of coercing technology transfers, replacing the customary forced technology transfers that China agreed to end in its WTO agreement. Further discussion of forced technology transfers can be found in Chapter 2.

In addition to these concerns, high-tech investments into China have the potential to contribute to the development of militarily significant technologies.¹⁸ China's current emphasis on information warfare in its military doctrine, discussed in greater detail in Chapter 8, makes the presence of investment in possible dual-use military technology particularly alarming.

China's Prominent Role in Global High-Tech Supply Chains

Since 1990, China's total exports have grown eightfold, to more than \$380 billion in 2003, with its exports in the electronics industry accounting for thirty percent of Asia's total in that sector.¹⁹ The share of China's exports related to high-tech goods has increased dramatically over the past decade. For example, electronics, machinery, and transport equipment have gone from 18.1 percent of China's exports in 1994 to 42.9 percent of its exports in 2003, an increase of 24.8 percent.²⁰ Of this amount, exports of office and data processing machines (which include computers and computer components) increased by 12.1 percent, electric appliances by 4.8 percent, and telecommunications equipment by 4.7 percent.²¹ In addition, R&D performed in China by majority-owned foreign affiliates of U.S. companies in 2001 totaled \$506 million (up from \$7 million in 1994), making China the eleventh largest recipient of U.S.-owned foreign R&D expenditures.²² Figure 7.1 shows the U.S. trade deficit with China in technology goods from 1991 to 2003.

**Figure 7.1 U.S. Advanced Technology Products (ATP)*
Trade with China**



*As Defined by the U.S. Department of Commerce.²³
Source: U.S. Census Bureau

Trade and investment flows in the Asian region have undergone a major shift in the past decade. In the 1980s and early 1990s, capital goods and components “were shipped from Japan to Asia’s newly industrializing countries for processing and then exported to industrial countries. China’s opening to trade has added a link in this chain. Capital goods are now shipped to Taiwan and South Korea; capital-intensive components are then sent to China and elsewhere in Asia for labor-intensive processing and assembly, before being reexported to developed markets.”²⁴

This new trade pattern has changed the pattern of China’s imports. Whereas between 1995 and 2000, China’s total imports for domestic demand almost doubled to \$78.8 billion, its imports for reprocessing nearly tripled to \$81.9 billion. China is now running trade deficits with eastern Asia and trade surpluses with North America and Europe. According to Chinese data, China currently has trade deficits of \$31.5 billion with Taiwan, \$13.1 billion with South Korea, \$7.6 billion with the ASEAN, \$5 billion with Japan, and \$1.3 billion with Australia.²⁵

Specifically in high-tech sectors Asian countries worry about losing their competitive edge to China especially in high-technology markets.²⁶ For example, the new trend for Japanese FDI to China is that electronics companies make high-profile investments to produce high-end consumer products. China is thus acquiring a full-set industrial structure at the expense of Japan.²⁷ The Commission was told that since 1998, “a third to a half of Japan’s China-bound FDI was in the high-tech sector, particularly in electrical machinery and electronics.”²⁸

The Commission heard testimony from Jason Dedrick of the University of California's Irvine Center for Research on Information Technology and Organizations concerning the electronics manufacturing trade between the United States and China. He testified that China's growth as a world computer manufacturer did have some positive effects on the U.S. industry in the 1990s. First, by developing production networks in Asia, U.S. companies were able to compete with the Japanese. Second, U.S. companies were able to pass off low-value, low-margin manufacturing to Asia and keep higher-profit, higher-margin industries in the United States. And finally, the IT productivity boom of the late 1990s was made possible through lower-cost hardware.²⁹

Taiwan and the United States are the main foreign actors that shape China's role in global trade and investment patterns in high-tech goods. The U.S. contribution to this chain has traditionally been at the front in the innovation and development of new technologies and platforms, creating and determining the technologies to be traded. Thus, the U.S.-Taiwan-China trade and investment triangle, according to testimony by Professor Barry Naughton of the University of California, San Diego, allows U.S. companies' technology products and design platforms to dominate the global arena.³⁰ However, the Chinese government is now taking measures that have created tensions with U.S. high-tech companies.³¹ China is developing its own domestic software standards for wireless computers, introducing exclusive technology formats for cell phones and DVD players, drafting standards for radio frequency identification, and using tax policies to benefit domestic production of semiconductors.³² This latter action is the subject of the first U.S. WTO dispute brought against China, which is discussed in Chapter 2.

Taiwan's high-tech investment into China carries unique economic and security concerns. John Tkacik testified to the Commission that

In a top secret report entitled, "An Analysis on how the Chinese Communist Party Attracts Taiwanese High Tech Investment for the Suzhou Industrial Park," Taiwan's intelligence agency reported in July 2001, that the Chinese authorities have a blueprint to actively develop semiconductor and high-tech industry 'clusters' which include the entire spectrum of each industry. The result, the report said, was that China has effectively attracted the key sectors of Taiwan's computer industry, from downstream component makers like computer motherboard and monitor producers to PC cases and mouse makers. The report suggested that the Taiwan-invested high-tech sector would be a virtual 'puppet' of Beijing and recommended that the Taiwan government adopt policies to curb high-tech investment in China. Indeed, the one high-tech area in China which Taiwan's government still prohibits local investors from investing is semiconductor fabrication, but that ban, too, appears to be eroding.³³

A recent report on Taiwan's semiconductor industry issued by the U.S.-Taiwan Business Council detailed the challenges China poses for Taiwan's industry. According to the report, more and

more integrated circuit design firms are now choosing to have their chips fabricated in China rather than Taiwan in order to avoid the extra cost.³⁴ Taiwan government policies to curb the relocation of high-tech manufacturing to China have failed.³⁵

In addition, the U.S. national security establishment is concerned over competition with China's high-tech industry, specifically its semiconductor industry, and by China's attraction as a low-cost, high-tech manufacturing center. As an example of this concern, the U.S. Department of Defense and the National Security Agency have "partnered with IBM to ensure on-shore manufacturing of critical semiconductor products over the next ten years There is a very significant concern within the Department of Defense and the national security community generally about the erosion of U.S. domestic production and the growth in Chinese domestic production."³⁶

In these global supply trends, the United States presently tends to perform the most complex manufacturing, while more routine manufacturing is parceled out for lower-cost overseas production. While there is insufficient data at the moment to make an empirical case that the United States is in danger of losing its high-tech manufacturing sector to overseas competition,³⁷ some alarming trends in R&D deserve greater attention.

The U.S. ability to be an R&D leader and maintain an innovative edge is based on the national pool of intellectual capital. In 2002, five percent, or 59,000, of all bachelor degrees awarded in the United States were engineering degrees. By comparison, thirty-nine percent, or 219,000, of China's bachelor degrees awarded were in engineering.³⁸ Total graduate engineering enrollment in the United States in 2002 was 109,506, of whom 51,910 were foreign students.³⁹ While the United States has not yet lost its superiority in innovation, many believe that it must put a new focus on enhancing its pool of intellectual capital, or it will lose its competitive edge within a generation.⁴⁰

Ineffective Intellectual Property Rights Protection

The International Intellectual Property Alliance (IIPA) reported in September 2003 that IPR abuses in China continue unabated. In 2002, the piracy levels remained at ninety percent or above, translating to a \$1.8 billion loss to the pirated industries, according to IIPA.⁴¹

Three major technology product sectors largely susceptible to this lack of adequate IPR protection are the optical media, Internet, and business software technologies. Optical media plants produce pirated CDs, VCDs, and DVDs at a rampant pace. According to the Motion Picture Association of America, 95 percent of the video discs in China are pirated.⁴² Web sites devoted to pirated MP3 files are on the rise, particularly among the young consumer base. And the business software industry suffers from unauthorized copying from companies and even government entities.⁴³ Figure 7.2 shows the estimated U.S. trade losses due to Chinese piracy in 2001–03.

Figure 7.2 Estimated Trade Losses Due to Piracy in China, 2001–2003
(millions of U.S. dollars)

Industry	2003	2002	2001
Business software applications	NA	\$1,637.3	\$1140.2
Entertainment software	568.2	NA	455.0
Records & music	286.0	48.0	47.0
Motion pictures	178.0	168.0	160.0

Source: IIPA, “2004 Special 301: People’s Republic of China,” (Washington, DC: IIPA, 2004).

The WTO’s Council for Trade-related Aspects of Intellectual Property Rights (TRIPS Council) has found that while China has approved new laws to improve its IPR protections, such as amendments to the Patent Law Implementing Measures, Rules on the Determination and Protection of Well-Known Trademarks, and the drafting of revisions to the 2001 Internet-related implementing rules, enforcement is lacking.⁴⁴ In particular, the Chinese government suffers from a lack of “coordination among Chinese government ministries and agencies, local protectionism and corruption, high thresholds for criminal prosecution, lack of training and weak punishments.”⁴⁵ A further discussion of TRIPS and IPR as it relates to the WTO can be found in Chapter 2.

Acquisitions of U.S. Technology

U.S. technology and expertise have been transferred to China through a variety of channels: U.S. firms’ investment and joint venture projects in China, including R&D projects; Chinese firms’ investments in the United States; cooperative exchange programs between U.S. and Chinese scientists and engineers; and education and employment opportunities for Chinese nationals in U.S. universities and research institutes. The Commission is concerned that as China’s economic power expands, its ability to acquire advanced U.S. technology and production facilities will increase exponentially. There is a need for the U.S. government to monitor these technology transfers in a more comprehensive and coordinated manner.

The S&T Agreement

The U.S. government entered into a formal government-to-government S&T cooperative program with China beginning in 1979. Under the U.S.-China Agreement on Cooperation in Science and Technology, the two countries have conducted numerous collaborative projects under the auspices of eleven federal agencies and branches. The agreement covers diverse fields such as basic research in physics, energy-related projects, civil industrial technology, and digital mapping. In a 2002 report to Congress on these programs, the Department of State concluded that the majority of programs under the agreement have been in the “benign civilian domain” and that “while it is possible that there may have been some bleed-over into the military sphere, such unintended side effect is difficult to document or substantiate.”⁴⁶ A chart of U.S.-

China active protocols, agreements, memoranda of understanding, and annexes operative from 1997 to 2001 is in appendix A.

In its 2002 Report, the Commission noted that there was “no centralized mechanism for coordinating, funding or reporting to Congress on the various cooperative programs occurring” between government agencies and Chinese entities.⁴⁷ Accordingly, the Commission recommended in its 2002 Report that the State Department conduct these reviews biennially. Congress approved this recommendation, and it is incorporated in P.L. 107–314 (sec. 1207). The reporting requirement includes an accounting of all activities conducted under the agreement and a projection of activities to be undertaken under the agreement during the next two years; a determination by the Secretary of Defense, in consultation with the director of Central Intelligence, of the extent to which the activities conducted under the agreement have enhanced the military and defense industrial base of the PRC and an assessment of the effect that projected activities under the agreement could have on the PRC’s economic and military capabilities; and a determination by the inspector general of the extent to which activities under the agreement provide access to technology, information, or expertise that could enhance the PRC’s military capabilities; and the extent to which activities under the agreement comply with U.S. export control laws. The law also directs the president to establish an interagency working group to oversee implementation of the agreement.

The first report under this legislation was due April 1, 2004. As of the writing of the Commission’s Report, the Department of State had yet to issue its 2004 Report. The Commission intends to closely review and evaluate the findings of this report and recommend, where appropriate, legislative action to address identified problems.

Investment in the United States and CFIUS

The United States has in place export control laws designed to protect transfers of designated technologies critical to U.S. national security. Additionally, a process implemented through the interagency Committee on Foreign Investment in the United States (CFIUS) is an important tool to ensure that while the United States maintains an open investment climate, U.S. technology critical to national security is not lost through foreign acquisitions of U.S. companies.

In 1988, Congress provided the CFIUS with the authority to review, investigate, and block potential threats to U.S. national security resulting from foreign acquisitions of U.S. companies. Foreign entities voluntarily report such acquisitions because, once reviewed, they are given “safe harbor.” However, those not reported are forever subject to a government-ordered divestiture should national security concerns surface. Unknown, however, is whether certain acquisitions may either go unnoticed or fall outside existing criteria but still pose security issues for the United States.

Given the increasingly open trading relationship between the United States and China, and the impact of China’s investments in the United States, the Commission is concerned over the adequacy of CFIUS’s reach. Are the current criteria used in the CFIUS proc-

ess to evaluate technology transfers and their potential impact on national security adequate? Are enhanced monitoring procedures needed? The CFIUS review focuses solely on traditional national security concerns with investments, while failing to consider U.S. economic security interests.

The Commission is planning future research and hearings into the security dimensions of China's acquisitions by various means of U.S. advanced technology, including an assessment of the adequacy of interagency coordination and consultation on this issue through CFIUS and other interagency structures. As part of this examination, the Commission intends to assess whether current standards for determining security concerns are sufficient.

RECOMMENDATIONS

- The U.S. government must develop a coordinated, comprehensive national policy and strategy designed to meet China's challenge to the maintenance of our scientific and technological leadership. America's economic competitiveness, standard of living, and national security are dependent on such leadership. The Commission therefore recommends that Congress charge the administration to develop and publish such a strategy in the same way it is presently required to develop and publish a national security strategy that deals with our military and political challenges around the world. In developing this strategy, the administration should utilize data presently compiled by the Department of Commerce to track our nation's technological competitiveness in comparison with other countries.
- The Commission recommends that Congress revise the law governing the CFIUS process (Title VII of the Defense Production Act)—which gives the president authority to investigate mergers, acquisitions, or takeovers of U.S. firms by foreign persons if such activities pose a threat to national security—to expand the definition of national security to include the potential impact on national economic security as a criterion to be reviewed. In this regard, the term national economic security should be defined broadly without limitation to particular industries.
- The Commission recommends that Congress direct the administration to transfer chairmanship of CFIUS from the Secretary of the Treasury to the Secretary of Commerce.

Appendix A

U.S.-China Active Protocols, Agreements, Memoranda of Understanding (MOU), and Annexes Operative from 1997 to 2001

Agency	Protocol, Agreement or MOU	Annex
Department of Energy	High Energy Physics Implementing Accord	
	Protocol on Nuclear Physics and Controlled Magnetic Fusion Research	
	Protocol for Cooperation in the Fields of Energy Efficiency and Renewable Energy Technology Development and Utilization	<ul style="list-style-type: none"> • Annex I: Rural Energy Development • Annex II: Wind Energy Development • Annex III: Energy Efficiency • Annex IV: Renewable Energy Business Development • Annex V: Exploratory Research for Advanced Batteries and Ultracapacitors • Annex VI: Geothermal Production and Use • Annex VII: Renewable Energy Policy and Planning
	Fossil Energy Protocol	<ul style="list-style-type: none"> • Project Annex I: Cooperation in the Area of Power Systems • Project Annex II: Cooperation in the Area of Clean Fuels (not yet signed) • Project Annex III: in the Areas of Oil and Gas • Project Annex IV: Cooperation in the Areas of Environmental Technologies • Project Annex V: Climate Science
	Agreement on Peaceful Uses of Nuclear Technologies	
	Protocol on Exchange of Energy Information	
	The U.S.-China Energy and Environment Technology Center	
Department of the Interior <i>Minerals Management Service</i>	Memorandum of Understanding on Mineral Resource Management Information Sharing	

Appendix A—Continued
U.S.-China Active Protocols, Agreements, Memoranda of Understanding (MOU), and Annexes Operative from 1997 to 2001

Agency	Protocol, Agreement or MOU	Annex
<i>Fish and Wildlife Service</i>	The Protocol on Cooperation and Exchanges in the Field of Conservation of Nature	Memorandum of Understanding on Water Resources Management and Conservation
<i>Bureau of Reclamation</i> <i>U.S. Geological Survey</i>	Earth Sciences Protocol	<ul style="list-style-type: none"> • Annex I: Sediment-Hosted Gold Deposits of the United States and China • Annex II: Collaborative Studies of the Major Mineral Deposits, Metallogenesis, and Tectonics of Northeast China • Annex III: Collaborative Studies of the Human Health Impacts of Domestic Coal Use in China and the United States
	The Earthquake Studies Protocol	<ul style="list-style-type: none"> • Annex I: Investigations of Premonitory and Phenomena and Techniques for Earthquake Prediction • Annex II: Investigation of Intra-plate Active Faults and Earthquakes • Annex III: Cooperative Research on Earthquake Engineering and Hazards Mitigation • Annex IV: Cooperative Research Projects on Deep Crustal Structure • Annex X: Cooperative Research Projects on Laboratory Studies in Rock Mechanics • Annex XI: Deployment of Very Long Period Seismograph Stations and Cooperative Research • Annex XII: Exchange of Data and Films of Seismograms
	The Protocol for Scientific and Technical Cooperation in Surveying and Mapping Studies	<ul style="list-style-type: none"> • Project Annex I: Scientific and Technical Cooperation in Surveying and Mapping Studies Concerning Developing Geographic Information Systems • Project Annex II: Surveying and Mapping Studies in the Application of Remote Sensing Information

Appendix A—Continued
U.S.-China Active Protocols, Agreements, Memoranda of Understanding (MOU), and Annexes Operative from 1997 to 2001

Agency	Protocol, Agreement or MOU	Annex
<i>U.S. Geological Survey</i>		<ul style="list-style-type: none"> • Project Annex IV: Scientific and Technical Cooperation in the Application of Geodetic and Geophysical Data to Mapping, Charting, and Geodetic Programs
	The Surface-Water Hydrology Protocol	<ul style="list-style-type: none"> • Project Annex I: Interchange of Scientific and Technical Information on Hydrology and Analytical Techniques of Water Resources Study • Project Annex II: Hydrologic Measurement Procedures, Instruments, and Equipment • Project Annex IV: Cooperative Project on Sediment Transport • Project Annex XI: Cold Regions Hydrology • Project Annex XII: Water Quality
Department of Commerce <i>National Oceanic and Atmospheric Administration</i>	Protocol on Cooperation in the Field of Marine and Fisheries Science and Technology	
	Protocol on Cooperation in the Field of Atmospheric Science and Technology	
<i>Technology Administration</i>	Protocol on Cooperation in Civil Industrial Technology and Scientific and Technical Information	<ul style="list-style-type: none"> • Annex II: Cooperation in Civil Industrial Technology
Department of Agriculture <i>Foreign Agricultural Service</i> <i>Agricultural Research Service</i> <i>U.S. Forest Service</i>	Understanding on Agricultural Exchange	
	Joint Operating Agreement on Biological Control	
	Memorandum of Understanding on Forestry Cooperation	
Nuclear Regulatory Commission	Protocol on Cooperation in Nuclear Safety Matter	

Appendix A—Continued
U.S.-China Active Protocols, Agreements, Memoranda of Understanding (MOU), and Annexes Operative from 1997 to 2001

Agency	Protocol, Agreement or MOU	Annex
National Science Foundation	The Basic Science Protocol	
	The Earthquake Studies Protocol	
	Memorandum of Understanding on Ocean Drilling	
Department of Health and Human Services	Memorandum of Understanding on AIDS	
<i>National Institutes of Health</i>	Memorandum of Understanding on Cooperation in the Basic Biomedical Sciences	

Source: U.S. Department of State, "U.S.-China Science & Technology Cooperation" (Washington, DC: Department of State).

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CHAPTER 8

CHINA'S MILITARY MODERNIZATION AND THE CROSS-STRAIT BALANCE

“REGIONAL ECONOMIC AND SECURITY IMPACTS.

The Commission shall . . . review the triangular economic and security relationship among the United States, Taipei and Beijing, including Beijing's military modernization and force deployments aimed at Taipei, and the adequacy of United States executive branch coordination and consultation with Congress on United States arms sales and defense relationship with Taipei.” [P.L. 108–7, Division P, Sec. 2(c)(2)(F)]

KEY FINDINGS

- There has been a dramatic change in the military balance between China and Taiwan. In the past few years, China has increasingly developed a quantitative and qualitative advantage over Taiwan.
- The People's Liberation Army (PLA) continues to acquire military capabilities aimed at intimidating Taiwan and deterring the United States from intervening on Taiwan's behalf in the event of a Taiwan Strait crisis. It appears the Chinese buildup is designed to forestall measures that China perceives as steps toward independence by Taiwan and to coerce Taiwan to end the island's continued separate status. A significant component of China's military modernization strategy is to develop sufficient capabilities to deter U.S. military involvement in any cross-Strait conflict and to prevail even if the United States becomes involved.
- China's ballistic missile force consisting of between five hundred to five hundred fifty missiles with an annual increase of some seventy-five is a destabilizing factor in the trilateral relationship between the United States, China, and Taiwan. These missiles directly threaten Taiwan, while China's longer-range conventional missiles could also threaten Japan and U.S. forces deployed in the region.
- China's submarine acquisition and development program represents an increasing threat to U.S. naval operations, either in support of Taiwan or regional operations in the Western Pacific and South China Sea.
- A key element of China's military modernization program has been extensive acquisitions of foreign military technologies, particularly from Russia. Removal of the EU arms embargo against China currently under consideration would accelerate weapons modernization and dramatically enhance Chinese military capabilities and might lead Russia to authorize the export of even more sophisticated systems to China.

- The Taiwan Relations Act (TRA) gives Congress a unique oversight role in assessing Taiwan's defense needs. While there has been some recent improvement in terms of consultations, the Commission believes that executive branch coordination with Congress in this area has not been sufficient to allow Congress to fully exercise its important joint policymaking role in formulating U.S. defense assistance policy toward Taiwan.

OVERVIEW

The complex set of relations among the United States, China, and Taiwan requires careful diplomacy, a strong defense, and continued assessment by the United States of the military balance between the two sides. The central goal of the United States' Asia-Pacific policy is to preserve peace and stability in the region and to maintain the current status quo between China and Taiwan. The current policy of the United States has been designed to promote an environment that contributes to peaceful relations between Beijing and Taipei. Following the discussion of cross-Strait political developments in Chapter 4, this chapter focuses on the parallel military situation.

The Commission held a hearing on February 6, 2004, that examined *China's Military Modernization and the Cross-Strait Balance*. The Commission heard from senior State and Defense Department officials on current developments in U.S.-China-Taiwan trilateral relations. The Commission also heard from experts on the parameters of U.S. commitments to Taiwan under the TRA and the role of Congress laid out in the TRA, and from analysts of China's military modernization programs and its military-industrial complex.

The Commission also supported two research projects on China's arms buildup: The first was a report on Chinese procurement activities at the Moscow Air Show, with a particular focus on the ongoing China-Russia arms relationship. The second was an analysis of the impact of acquisitions of foreign weapons and technology on the PLA's weapons development and modernization programs. Both reports are available on the Commission's Web site.¹

ANALYSIS AND FINDINGS

Military Modernization and Growth of Defense Spending

In testimony to the Commission, Dr. Evan Medeiros of the RAND Corporation stated that between 1990 and 2002, China's official defense budget allocation for weapons procurement grew from five billion renminbi (\$600 million) to 57.3 billion renminbi (\$6.9 billion). This represents an approximately one thousand percent increase over a twelve-year period, outpacing China's rapid growth in GDP. According to Dr. Medeiros, the share of the budget devoted to weapons procurement also increased, from 16.3 percent in 1990 to 33.8 percent in 2002.² See figure 8.1 for a presentation of China's defense spending from 1997 to 2004.³

Figure 8.1 China's Defense Spending, 1997-2004
(in billions of yuan)

	Defense Spending	Percentage Increase	Percentage GDP growth	Consumer Price Index (CPI)
1997	80.570	12.7	8.80	2.800
1998	90.990	12.7	7.80	-0.800
1999	104.650	15.1	7.10	-1.300
2000	120.750	12.7	8.00	0.400
2001	144.200	17.7	7.30	0.700
2002	169.440	17.0	8.00	-0.800
2003	185.300	9.6	9.10	0.500
2004	207.000	11.6	9.50	1.100
Total	1102.900			
Averages	137.860	13.6	8.20	

Source: see footnote 3.

Along with the increase in China's weapons budget, there has been an annual increase on average of thirteen percent in China's officially announced defense budget. These increases are significantly larger than China's GDP growth rate and its inflation rate, China's stated reasons for the growth in its defense budgets. According to Ding Jiye, director of the Finance Department of the PLA General Logistics Department, China will increase its spending on defense in 2004 by 21.83 billion renminbi (\$2.64 billion).⁴ The Commission agrees with the current Defense Department assessment that the PLA defense budget is grossly underreported and that reliance on official figures excludes much of China's military modernization program. The Commission continues to estimate that China's defense budget is at least two to three times higher than official statements. According to Deputy Assistant Secretary of Defense Richard Lawless, "the officially announced budget in 2004 is more than \$25 billion, but when off-budget funding for foreign weapon system imports is included, we estimate total defense-related expenditures this year between \$50-\$70 billion, ranking China third in defense spending after the U.S. and Russia."⁵

China's Ballistic Missile Buildup

China's continuing ballistic missile buildup and the rapid pace of deployment opposite Taiwan are a serious challenge to Taiwan's security. These missiles increase the range of options Chinese authorities have to threaten and coerce decisions taken in Taipei. The PRC currently has approximately five hundred to five hundred fifty short-range ballistic missiles (SRBMS) deployed that can strike Taiwan, and that number is expected to grow substantially over the next few years.⁶ According to Stephen Blank of the U.S. Army War College's Strategic Studies Institute, "These missiles include the modified M11A and M9A that have ranges of six hundred and

five hundred kilometers, respectively, and can strike any area of Taiwan from their bases in Nanjing military region.”⁷ According to the Defense Department’s 2003 *Annual Report to the Congress on China’s Military Modernization*, (2003 DoD Report) all of China’s known SRBM assets are believed to be based in the Nanjing Military Region opposite Taiwan.⁸ Deputy Assistant Secretary of State Randy Schriver testified before the Commission that the State Department believes “the missile threat and the missile challenge is extremely serious.” Taiwan currently has limited dedicated military assets to guard against such an attack.

China’s increasing ballistic missile inventory may have already in fact altered the status quo in the Taiwan Strait. Deputy Assistant Secretary Lawless noted in his testimony that “the build-up directed so forcefully and frontally against Taiwan, is clearly an attempt to change the dynamic. And by dynamic, I mean to an extent, China’s calculation on what the cost would be to China both in terms of resources and of time that would have to be devoted to coerce or invade Taiwan.”⁹ This changing dynamic is an issue requiring review and focus by U.S. policymakers. The necessity of maintaining a U.S. policy of ambiguity concerning Taiwan’s de jure status should not blind us to the de facto shift that is taking place in the military balance.

China sees its missile deployments as a lever to gain influence over Taiwan. It has been reported that then-President Jiang Zemin proposed to President Bush in October 2002 that China could link its deployment of short-range missiles facing Taiwan to U.S. arms sales to Taiwan.¹⁰ This proposal did not result in any public response by the United States. If China chose to ease cross-Strait tensions by redeployment of the missiles, the threat would still remain, as China retains the ability to strike the same set of targets with longer-range ballistic missiles and long-range cruise missiles. While the distances traveled would be longer, the time necessary to accomplish the mission would not be inordinately extended. These missiles are mobile and can be moved with little notice. This would be a less visible but still effective coercive tool against the authorities in Taipei.

Weapons Development and Acquisitions: Shifting the Cross-Strait Balance

China is in the middle of a far-reaching buildup of its naval, air, and ground forces as well as ongoing development of information warfare capabilities and enhanced space-based assets. China is developing a leading-edge military with the objective to intimidate Taiwan and deter U.S. involvement in the Strait.

The military modernization program initiated by Deng Xiaoping in the early 1980s has had a significant effect not only on actual Chinese military capabilities but also on how the United States and its regional allies view their relationship with China. The weapons China is acquiring are an increasing challenge to American technical military superiority in the region. The Chinese strategy of improving its force options versus Taiwan and the ability to deter and counter U.S. military intervention is fast becoming a reality.

According to testimony before the Commission by Dr. David Finkelstein of the CNA Corporation, "Acting upon its own assessments of the rapidly changing nature of warfare and China's changing security environment, Beijing's military leadership came to the conclusion that the armed forces of China were ill-suited to cope with its future defense-related challenges. The scope of reforms the Chinese defense establishment planned to achieve cuts across every conceivable facet of activity within that establishment."¹¹

China's strategic acquisition program and the development of strategies and doctrines to meet these challenges continue unabated. On December 17, 2003, *ITAR-TASS* reported that Russian Defense Minister Sergei Ivanov and Chinese Defense Minister Cao Gangchuan signed a follow-on working protocol on bilateral military-technical cooperation for 2004.¹² According to this report, "China is no longer purchasing massive numbers of weapons systems but is pursuing initiatives to obtain licenses and to *co-produce weapons for export*." This is a significant emerging issue, as this level of cooperation with Russia would help China's goal of evolving into a modern weapons-producing nation. According to a Commission-sponsored study by Richard Fisher, the PLA has become the major purchaser of Russian military weapons and technology:

By 2006, the PLA could have 400 SUKHOI fighters and fighter bombers.¹³ These will be armed with thousands of Russian made air-to-air and precision-guided air-to-ground munitions. Current U.S. F-15C, F-16 and Navy F/A-18C/E/F fighters will face an imposing challenge from the growing number of multi-role capable PLAAF SUKHOIS. In terms of maneuverability and close-in fighting, the SUKHOI has an advantage over the U.S. fighters in terms of higher thrust-to-weight ratio and lower wing loading, which give it better maneuverability.¹⁴ Even with U.S. Air Force F-15C fighters based in Okinawa, the PLA's fleet of 300-400 SUKHOI fighters would overwhelm U.S. fighters and their AWACS and tanker support. PLA will have many hundreds of advanced track via missile S-300 SAMs. By 2007, thereabouts, at least 12 KILO submarines, eight of which will be armed with advanced long-range CLUB anti-ship missiles, and this goes on to include naval weapons technologies that's enabling three new classes of stealthy warships.¹⁵

Dr. Finkelstein also notes, "The PLA is demonstrating that it is a learning organization. They know what's wrong with the PLA. They're working to make the necessary adjustments. And it's likely going to take many years for the PLA to turn its aspirations into reality."¹⁶ The PLA has begun to integrate these systems into its operational forces and is in the process of rationalizing their use in a cross-Strait encounter.¹⁷ Moreover, China is attempting to develop the capabilities to avoid or counter U.S. involvement in a conflict in the Strait. It has been demonstrated in military exercises that China has incorporated a confrontational training strategy,¹⁸ and most of the training now explicitly identifies the United States as a possible adversary.¹⁹ As the 2000 Defense Department report

on China's military modernization states, "A cross-Strait conflict between China and Taiwan involving the United States has emerged as the dominant scenario guiding PLA force planning, military training, and war preparation."²⁰

U.S.-China Increasing Naval Competition

China's military modernization is focused on exploiting assessed vulnerabilities in Taiwan's national and operational-level systems and on Taiwan's dependence on shipping for its survival. The Commission noted in its 2002 report that the topic of a Chinese blockade of Taiwan would be the most important defense topic in the coming decade.²¹ China views the United States as the primary maritime obstacle to its interests in East Asia, especially Taiwan. Enforcing its South China Sea territorial claims—including the Spratly Islands—requires the PRC to possess a navy that can sustain itself away from shore, with air defenses, and air cover.

In the past two years, the PRC Navy has initiated a significant program to build military ships. It has been reported that "construction has begun on some 70 military ships over the last 12 months, including a number of landing craft."²² According to Dr. Evan Medeiros of the RAND Corporation, "in the last three to four years, one of China's key shipyards has built four new 7,000-ton destroyers based on stealthy design and with improved air defense and anti-submarine capability. The serial production of these modern vessels is a first for China's shipbuilding industry."²³

The Commission also heard testimony from Professor Lyle Goldstein and Mr. William Murray of the Naval War College that China is making a significant investment in submarine and anti-submarine warfare. Submarines have become a central focus of China's naval and peripheral strategy. It is easier to track a submarine with a submarine, and the numbers and types of submarines China is acquiring could seriously impact U.S. submarine operations in the region. China has focused its resources on the purchase of Russian state-of-the-art naval platforms and associated weapons. In 2002, Russia sold China an unprecedented number of Russian *KILO*-class submarines and the antisubmarine/antisurface shipping *TEST-71* torpedo.²⁴ Russia continues to provide technical support to China's domestic production of the *SONG*-class submarine. The 2002 Defense Department report indicates that the *KILO*-class submarines provide Beijing with access to previously unavailable quieting and weapons technology. Additionally, the 2002 report stated, "China will continue using Russian technology to improve quieting, propulsion, and submarine design; it also is incorporating foreign technology into its existing submarines. China also will benefit from the maturation of its domestic submarine research and development infrastructure to achieve a capability to design and manufacture modern submarines domestically."²⁵

As the 2003 Defense Department report states, "The principal areas where China appears to be making advances in coercive military capabilities involve airpower, missiles, and information operations. Military coercion also can be accomplished through the use of blockades and quarantines."²⁶ Taiwan is vulnerable to Chinese coercive threats to its seaborne supply lines. The PLA has initiated a program to upgrade its submarine force's systems, weapons,

training, and doctrine. The PLA Navy's near-term focus on diesel submarines, however, is one of several indicators suggesting that Beijing's preferred coercive tool against Taiwan would be a naval blockade.²⁷ According to the testimony of Professor Goldstein and Mr. Murray, "China is making a very significant investment in undersea warfare and submarines are emerging as the centerpiece of its ongoing naval modernization."²⁸

Moreover, according to Mr. Murray, "In May 2002, Russia announced a contract to sell eight of these *KILO* submarines to the People's Republic of China. They're getting eight of these for \$1.6 billion, and depending on the source, they'll either take delivery by 2005 or 2007. These submarines are extremely difficult to find, and they'll be operated in some of the most challenging antisubmarine warfare environments on the face of the earth."²⁹

China has a tremendous number of submarines. According to Professor Goldstein and Mr. Murray, "One submarine that is unlocated is going to cause a battle group commander to take a real hard look at what he wants to do and why. And China can easily muster 40 or 50 submarines without much trouble whatsoever. Additionally, China has something we have a hard time getting over there, and that's local knowledge. When they operate in these waters day after day, hour after hour, they acquire a level of expertise on where it's quiet, where it's noisy, where are the fishing vessels and so on and so forth, that we just don't have yet."³⁰

Russia-China Military Transfers—Increasing Lethality

A comparison between Russian arms exports to China in the early 1990s with those more recently authorized shows an alarming increase in lethality and sophistication. Restrictions on the levels and types of technology the Russian government was willing to sell to China have weakened. Russia is selling systems to China that only a few years ago the Russian military establishment was hesitant to even discuss, let alone sell, e.g., the *CLUB-S* antiship cruise missile. And with concern growing over the lifting of the EU arms embargo, the Putin administration may be emboldened to authorize the export of even more sophisticated systems to China to retain its market share. Nikolay Shcherbakov, adviser to the director general of the Altair Naval Scientific Research Institute of Electronic Engineering, is reported as saying that "we are supplying China with new-generation equipment. We have been allowed to supply *MOSKIT* supersonic antiship cruise missiles with twice the range—240km instead of the existing 120."³¹ Additionally, collaborative ventures between Russian and Chinese defense firms can be tied directly to qualitative improvements in Chinese weapons.

The cumulative effect of the acquisition of Russian arms provides the foundation the PLA needs to develop new doctrines, strategies, and mission capabilities. In his testimony to the Commission, Mr. Fisher stated that "these new capabilities are increasingly presenting specific challenges to American power in Asia and are propelling what some officials in Taiwan fear will be a crossover in the military balance by 2005 and beyond."³²

Although the PLA is still reliant on foreign acquisitions, in the last five years China's defense-industrial base is becoming a modern productive base capable of producing the components, systems,

and weapons that China needs. China's industrial firms have improved their R&D techniques, their production processes, and the quality of their output. It is long-term Chinese policy to acquire both weapons systems and an indigenous capability to produce that system. This policy is beginning to have an immediate impact on systems capabilities. According to Dr. Medeiros, China "has been able to serialize the production of destroyers based on stealthy designs with improved air defense and anti-submarine capability. China has also improved its ability to serial produce ballistic missiles with an increase in annual production of short-range ballistic missiles from 50 to 75 percent."³³

Israel-China Military Transfers

As the Commission noted in its 2002 report, Israel was second only to Russia as a weapons system provider to China and as a conduit for sophisticated military technology. The Commission continues to be concerned over Israeli transfers of U.S.-origin technology to China.

In January 2003, it was reported in the Israeli press that in response to concerns raised by the United States, the government of Israel had decided to suspend all contacts on the export of arms equipment to China.³⁴ At that time, Israel apparently gave assurances to the United States that it would not sell any item to China that could harm U.S. security.³⁵ The United States and Israel subsequently established a framework by which they are able to discuss the issue of Israeli defense assistance to China. According to Amos Yaron, director-general of Israel's defense ministry, "There are things we are able to do and are doing, and there are things that are more problematic, and it is in this framework that we will continue to work with China and with our U.S. friends to clarify matters and avoid misunderstandings."³⁶

In late March 2004, Israeli press reports indicated that Mr. Yaron had held talks in Beijing on re-establishing Sino-Israeli defense ties.³⁷ The specific content of these discussions is not a matter of public knowledge. The Commission understands that Israel has offered training facilities, including one for urban warfare, to train China's security forces for the Olympics. Over the last year, reports indicate that Israeli firms have discussed a range of projects with China, including the export of sensor and observation systems, security fences, microwave and optics, training, metal detectors, and packages for airport and vital facilities security. The press report stated that Israel had also offered the Chinese training in the use of unmanned air vehicles to monitor facilities.³⁸ According to a December 15, 2003, *Defense News* story, "Israel's MOD (Ministry of Defense) recently granted more than a dozen licenses for Israeli firms to market specific products and services in China, industry officials here said. Israeli-developed systems proposed for sale to China's People's Liberation Army include the Tavor personal assault weapon, pilot training systems, advanced communication and surveillance gear, and a range of unmanned aerial vehicles."³⁹

The Defense Department reports that Israel has sold a number of *HARPY* unmanned aerial vehicles (UAV) to China.⁴⁰ The PLA has apparently integrated the *HARPY* into its operational forces,

since they appeared in PLA exercises during 2002. The *HARPY* is designed to detect, attack, and destroy radar emitters. These systems pose a significant threat to various critical military C4ISR facilities on Taiwan as well as to U.S. operational forces operating in the region. The UAV has a range of about five hundred kilometers and contains a high-explosive warhead.⁴¹

Finding the “Silver Bullet”

Contemporary Chinese military analysis tends to use the term “assassin’s mace” or “trump card” to cover a broad spectrum of Chinese military programs that more rightly should be assessed as conventional, rather than asymmetrical, operations. In his monograph *Rethinking Asymmetric Threats*, Dr. Stephen J. Blank writes, “We need to understand that it is not so much threats that are asymmetrical. Rather, it would perhaps be more precise and possibly even more instructive to use the term asymmetric with respect to strategies and enemies.”⁴² According to Mr. Jason E. Bruzdinski of the Mitre Corporation, “Traditional emphasis on superior strategy and tactics is an important characteristic of China’s strategic culture. This emphasis profoundly influences Chinese military thinking today, despite the recent focus placed on introducing advanced military hardware into the PLA. Specifically, *shashoujian* [assassin’s mace] blends traditional Chinese war fighting strategies with modern systems, platforms, and weapons that benefit from technology of the information age.”⁴³

China-Taiwan Information Warfare

Current PLA discourse promotes information warfare as an effective weapon to subdue Taiwan and deter possible U.S. intervention. According to University of Richmond Professor Vincent Wei-cheng Wang, “The attainment of long-range precision interception weapons, the use of unused frequencies in civilian TV and radio broadcasting for information communication, encryption-based codes to prevent information stealing, space and satellites to obtain intelligence, use of saturated tactical ballistic missiles, and the development of a directional infrared jamming system all are among Chinese possibilities.”⁴⁴ In the Taiwan Strait, the PLA seeks to gain information dominance in a conflict with Taiwan by attacking Taiwan’s command and control centers and information networks and by conducting propaganda and political warfare. The purpose is to coerce Taiwan by subduing the enemy without actually fighting.⁴⁵ According to the 2003 Defense Department report, “There is an emphasis on conducting operations that will paralyze the high-tech enemy’s ability to conduct its campaign, including operations to disrupt and delay the enemy’s capabilities at its inception Degrading a high-tech adversary’s ability to process or gather information is viewed as an absolutely essential task if the weak is to defeat the strong, especially if that high-tech adversary is perceived to be overly dependent upon information systems to enable its own operations.”⁴⁶

Recognizing the possible involvement of the U.S. military, the current scholarship on China’s R&D finds that PRC strategists believe that a superior navy could be defeated through the disabling of its space-based systems, as for example, by exo-atmospheric det-

onation of a nuclear warhead to generate an electromagnetic pulse, or advanced weapons systems such as tactical laser weapons. In addition to attacks against U.S. military systems, infrastructure, and forces, targets of an asymmetric attack include the domestic U.S. and Taiwan militarily critical infrastructures such as telecommunications networks, electrical power grids, civilian aviation systems, transportation networks, seaports and shipping, highways, and television broadcast systems.⁴⁷ It has recently been reported that China has successfully developed a laser cannon with a range of more than one hundred kilometers and might have already deployed it in Fujian Province facing Taiwan.⁴⁸ This era of Chinese military strategy, which focuses on the search for “silver bullet” weaponry to defeat a stronger opponent, viewed from a politico-military standpoint, signifies that the complex cross-Strait relationship is entering a new and, arguably, unstable era.⁴⁹

Potential Lifting of the EU Arms Embargo

French President Chirac⁵⁰ and German Chancellor Schroeder⁵¹ are on record stating they believe the current EU arms ban against China imposed in 1989 as a Tiananmen-related sanction⁵² is outdated and should be removed. While not actually binding, the policy did hold each country to prior discussion before the export of weapons to China.⁵³

An EU working group has been formed to look into the matter and report back to the European Commission. EU Foreign Policy Chief Javier Solana has signaled support for lifting the ban.⁵⁴ Access to more advanced systems and integrating technologies from Europe would have a much more dramatic impact on overall Chinese capabilities today than say five or ten years ago. For fourteen years, China has been unable to acquire systems from the West. Analysts believe a resumption of EU arms sales to China would dramatically enhance China’s military capability. If the EU arms embargo against China is lifted, the U.S. military could be placed in a situation where it is defending itself against arms sold to the PLA by North American Treaty Organization (NATO) allies. As John Tkacik of the Heritage Foundation writes, “EU members need to ask two questions: Which country is the most likely adversary against which China would employ advanced European military systems, and have the conditions that justified imposing the EU ban changed significantly.”⁵⁵ Additionally, this action could presumably affect the ability of the United States and NATO countries to cooperate in defense ventures. If European firms are permitted to sell arms to China, it should certainly impact decisions on any cooperative ventures between U.S. and European defense firms.

U.S. Policy and the Taiwan Relations Act

The central pillars of U.S. policy toward Taiwan are the TRA, the three communiqués, and President Reagan’s Six Assurances. The TRA provides a solid legal framework for the bilateral relationship and plays an important role in both Taiwan’s security and its domestic political developments. The historical origins of the act go back to January 29, 1979, when the Carter administration sent a bill to Congress providing for the conduct of unofficial U.S.-Taiwan relations in the post-Beijing recognition period. The original bill

contained a basic economic, cultural, and functional framework but did not provide for security guarantees or arms sales.⁵⁶ On March 29, 1979, Congress passed HR 2479; President Carter signed the bill (P.L. 96–8) into law on April 10. The main effect of the law guaranteed that U.S.-Taiwan relations would not be disrupted by the lack of diplomatic recognition. section 4 (a) of the TRA states:

The absence of diplomatic relations or recognition shall not affect the application of the laws of the United States with respect to Taiwan, and the laws of the United States shall apply with respect to Taiwan in the manner that the laws of the United States applied with respect to Taiwan prior to January 1, 1979.

At the time of recognition of the PRC, President Carter also terminated the twenty-five year-old U.S.-Taiwan mutual defense treaty. As a result, the TRA provided the legislative authority for continued arms sales and a statement concerning U.S. support for Taiwan's defense needs.

Key elements of the TRA include the following:

P.L. 96–8, section 3301 (2)(b)(4): It is the policy of the United States ... to consider any effort to determine the future of Taiwan by other than peaceful means ... a threat to the peace and security of the Western Pacific area and of grave concern to the United States.

P.L. 96–8, section 3302:

(a) Defense articles and services. In furtherance of the policy set forth in section 3301 of this title, the United States will make available to Taiwan such defense articles and defense services in such quantity as may be necessary to enable Taiwan to maintain a sufficient self-defense capability.

(b) Determination of Taiwan's defense needs. The President and the Congress shall determine the nature and quantity of such defense articles and services based solely upon their judgment of the needs of Taiwan, in accordance with procedures established by law. Such determination of Taiwan's defense needs shall include review by United States military authorities in connection with recommendations to the President and the Congress.

(c) United States response to threats to Taiwan or dangers to United States interests. The President is directed to inform the Congress promptly of any threat to the security or the social or economic system of the people on Taiwan and any danger to the interests of the United States arising therefrom. The President and the Congress shall determine, in accordance with constitutional processes, appropriate action by the United States in response to any such danger.

In his testimony to the Commission, Deputy Assistant Secretary Lawless said, "The United States takes its obligations to assist Taiwan in maintaining a self-defense capability very seriously. The United States actively monitors the security situation in the Taiwan Strait. We make available articles and services to Taiwan to

ensure that it can maintain a sufficient self-defense capability. We work with Taiwan on a series of non-hardware-related initiatives to address perceived shortcomings in Taiwan's readiness, and we maintain capabilities to assist in the defense of Taiwan if so required. The preservation of Taiwan's democracy depends on effectively balancing these two goals while providing Taiwan with the support it needs to deter PRC coercion."⁵⁷

TRA and the Congress

Through the TRA, Congress granted itself a joint role in Taiwan policy—it became a partner with the executive branch in assessing Taiwan's defense needs and in deciding how to respond to threats in the region.⁵⁸ Therefore, the TRA imputes shared decision-making by Congress. Unfortunately, the executive branch has not sufficiently coordinated its cross-Strait policies and actions with Congress in a manner allowing Congress to fully exercise its important role. For example, Congress has historically been notified only after the executive branch has in effect made a decision on the sale of specific weapons to Taiwan or after it had taken some Taiwan specific action.

The Taiwan Strait crisis of 1995–96 exemplifies the consequences of a lack of a robust congressional-executive coordination on cross-Strait policy. China conducted a series of missile firings within a few kilometers of Taiwan's major ports, Keelung and Kaohsiung. In response, President Clinton ordered two aircraft carrier task forces to divert to the waters near Taiwan.⁵⁹ Congress then requested that the president report to Congress on Taiwan's security pursuant to his obligations under the Taiwan Relations Act. President Clinton replied that because the purpose of the Chinese exercises was to "send a political message to Taiwan and the United States, and not to prepare for imminent military action against Taiwan," he was not required to report to Congress.⁶⁰ Unfortunately, it took military action by China to get the kind of focus on the regional balance that should be routine. Other events, such as the PLA's 2001 Dongshan exercise aimed at Taiwan, and Taiwan's 2004 referendum, should each have resulted in consultation with Congress.

In-depth consultations and systematic congressional-executive coordination on Taiwan as envisioned by the TRA and as envisioned by P.L. 107–228 on semiannual consultations are going to be critical for effectively managing this area of U.S. foreign policy going forward. The legislation ensures this responsibility:

P.L. 107–228, section 1263. CONSULTATION WITH CONGRESS WITH REGARD TO TAIWAN. Beginning 180 days after the date of enactment of this Act, and every 180 days thereafter, the President shall provide detailed briefings to and consult with the appropriate Congressional committees regarding the United States security assistance to Taiwan, including the provision of defense articles and defense services.

Additionally, the Foreign Relations Authorization Act of 2003 requires Taiwan to be treated as a non-NATO ally with respect to sales of U.S. defense articles and services.

Taiwan Defense Developments

While China's rapid economic growth has fed the rise in its military expenditures, Taiwan's economic situation appears to be hampering its continuing military modernization. As Taiwan's economic growth has slowed, this has led to constraints on the defense budget. The defense share of the national budget has fallen from 22.8 percent in 1996 to 14.7 percent in 2001. After personnel and administrative costs, there was little left over to acquire new military hardware.⁶¹ The 2004 fiscal year defense budget has a three percent increase, to US\$ 8.03 billion (NT [New Taiwan]\$ 265 billion) up from US\$ 7.8 billion (NT\$ 257 billion) in 2003. The new budget includes a more than thirty percent increase in military investment. Strong concerns have been raised in the United States, however, about Taiwan's budgetary and political commitment to purchasing adequate defense resources.

Taiwan's 2002 defense ministry white paper envisioned a three-pronged defense strategy to combat threats from China's military satellites, ballistic missiles technology, and information warfare.⁶² Taiwan's most significant vulnerability is its limited capacity to defend against the growing arsenal of Chinese ballistic missiles.⁶³

Taiwan's key defense weaknesses include a lack of a strong anti-submarine warfare force, a limited mine-laying and mine-sweeping capability, problems with the island's air defense, problems regarding integration of its various defense assets, a limited ability to conduct coordinated joint warfare (or defense), and a dependence on the United States to provide it with real-time targeting information.⁶⁴ The political situation among Taiwan's army, air force, and navy is characterized by considerable tension. While it is apparent both to those within and without Taiwan that Taiwan's air defense and naval operations are increasingly important to the island's security, the army believes that air and sea superiority cannot be held for long. It is the army's view that it is therefore necessary to plan for a land battle on the island's western shores. The army has fought to have a major say in defense planning and budgetary allocation.⁶⁵

According to news reports, the China Affairs Department of the Democratic Progressive Party published a report on China's basic military capabilities in which it said that Beijing had developed a "sudden strike" strategy to attack Taiwan. This story discussed a scenario in which an attack would consist of an initial seven-minute shock and strike missile barrage that would paralyze Taiwan's command system, followed by seventeen minutes in which Taiwan's air space will be invaded by fighter jets. Within twenty-four hours of the strike, 258,000 Chinese troops could be deployed in Taiwan. China's fast-growing military modernization and expansion is aimed at a possible war between 2005 and 2010, according to the report.⁶⁶

Taiwan Defense Budget and Weapons Programs

Taiwan's Defense Minister Tang Yiau-ming has stated that Taiwan's military is committed to pursuing a high-tech defense modernization program.⁶⁷ The top priority systems include building the announced early warning long-range radar system and the construction of the Po-Sheng [Broad Victory] C4ISR project. The mili-

tary is also interested in purchasing three PAC-3 systems, upgrading its PAC-2 systems, pursuing eight diesel submarines, and acquiring twelve P-3 Orion antisubmarine reconnaissance aircraft.⁶⁸

The total Taiwan budget is NT\$1.352 trillion, or US\$37.15 billion, with the defense portion taking 14.7 percent of the overall budget.⁶⁹ In addition, the government has submitted a request for NT\$50.3 billion (\$1.52 billion) for the acquisition of classified defense systems, with NT\$30.2 billion to be used for weapons.⁷⁰

The 2004 budget includes funding for the “Po-Sheng Project” and the long-range early warning radar system. Work on the Po-Sheng Project, which will coordinate all military functions—including command, control communications, computers, intelligence, surveillance, and reconnaissance has begun. The lead contractor is Lockheed Martin, and the contract could eventually be worth approximately \$2.15 billion.⁷¹ In September 2003, Lockheed Martin MS2 Tactical Systems was awarded an initial \$27.5 million contract to begin working on the integrated system for Taiwan. The project is expected to be completed by June 2004. Under the contract, Lockheed Martin will provide the C4ISR and Link-16⁷² combat radio capabilities across Taiwan’s armed forces. Taiwan will buy this system in increments, as funding is made available over the next few years.¹

In March 2004, the U.S. Defense Security Cooperation Agency notified Congress about the probable sale to Taiwan of two ultra-high-frequency long-range early warning radars as well as associated equipment and services. The total value could reach as much as NT\$58.55 billion, or \$1.8 billion. These radars would be part of Taiwan’s surveillance radar program.⁷³ The full package would also include missile warning centers, facilities to house and maintain the radar, and training programs. These systems would enable Taiwan to detect Chinese missile launches earlier, providing more warning time.⁷⁴ President Clinton approved the sale of the long-range radar in April 2000,⁷⁵ and in November 2003 the defense committee of Taiwan’s Legislative Yuan finally approved the acquisition. The long delay in final approval was the result of negotiations between the government and the Legislative Yuan.

Additionally, the Ministry of National Defense (MND) has formally presented a letter of request to acquire three PAC-3 units and upgrade three PAC-2 units to PAC-3 standards. Minister of Defense Tang Yiao-ming stressed that the PAC-3 procurement would be finalized in the 2005 budget,⁷⁶ with an estimated cost of NT\$110 billion (\$3.3 billion). It has been reported that the MND will request a special budget for the purchase, because the annual defense budget will be insufficient.⁷⁷ The MND hopes to finalize the submarine purchase plan by mid-2004. The only contract fully underway is the NT\$28 billion (\$844 million) contract for the KIDD-class destroyers.⁷⁸ The MND is also working on a low-altitude antitactical ballistic missile that, according to MND Administrative Deputy Minister Lee Hai-tung, will be completed within ten years.⁷⁹

¹Jason Sherman, “Taiwan To build Military-Wide C4ISR Network,” *Defence Tech*, October 11, 2003 DefenceTalk.com.

The MND has proposed spending NT\$605.2 billion (US\$ 17.9 billion) on arms procurement over the next five years. This proposal allots the air force 24.55 percent, the navy 23.76 percent, and the army 18.92 percent.⁸⁰ In terms of arms procurement, twenty-eight percent of the budget will be spent on information and electronic warfare equipment.

RECOMMENDATIONS

- The annual report to Congress recommended in Chapter 4 on Taiwan's requests for military equipment and technology should include an assessment of the new military systems required by Taiwan to defend against advanced PRC offensive capabilities.
- As recommended in Chapter 4, Congress and the administration should review the need for a direct communications hotline between the United States and Taiwan for dealing with crisis situations. This is important in light of the short time frame of potential military scenarios in the Strait, together with Chinese strategic doctrine emphasizing surprise and deception.
- The Commission recommends that Congress urge the president and the secretaries of State and Defense to press strongly their European Union counterparts to maintain the EU arms embargo on China.
- The Commission recommends that Congress direct the administration to restrict foreign defense contractors who sell sensitive military-use technology or weapons systems to China from participating in U.S. defense-related cooperative research, development, and production programs. This restriction can be targeted to cover only those technology areas involved in the transfer to China.
- The Commission recommends that Congress request the Department of Defense to provide a comprehensive annual report to the appropriate committees of Congress on the nature and scope of foreign military sales to China, particularly from Russia and Israel.

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CHAPTER 9

MEDIA AND INFORMATION CONTROL IN CHINA

“MEDIA CONTROL. *The Commission shall evaluate Chinese government efforts to influence and control perceptions of the United States and its policies through the internet, the Chinese print and electronic media, and Chinese internal propaganda.*” [P.L. 108–7, Division P, Sec. 2(c)(2)(I)]

KEY FINDINGS

- China’s economic reforms have not led to fundamental changes in its policy of controlling the free flow of information. China has successfully established systems of information control, which are both deep and widespread. The Chinese government’s crackdown on individuals who publish unacceptable content or violate information control rules is unevenly exercised, but nonetheless is part of a deliberate effort to establish comprehensive control. Selective but harsh enforcement has led to widespread self-censorship.
- The Internet is a growing focus of China’s information control efforts; many individuals in China and in the United States believe that it will lead to greater openness and the freer flow of information. However, the Chinese government is actively trying to control the Internet with a mixture of old tactics, such as high-profile punishment for vaguely defined crimes, and newer methods, such as establishing firewalls and tracing users.
- The Chinese government shapes popular perceptions of the United States and its policies through direct control over government-owned media outlets and by selectively censoring, and inducing self-censorship by, nongovernment media. This control has been used to create a consistent message in the Chinese media that is particularly critical of U.S. foreign policy and intentions in Asia. Through this propaganda and censorship, the government enhances the risks of misperception and miscalculation in the bilateral relationship and increases the potential for, and the difficulty of, managing crisis situations.
- The Severe Acute Respiratory Syndrome (SARS) crisis demonstrated both the extent of China’s efforts to control the free flow of information and the limits of this exercise, given the Chinese population’s growing access to the Internet and other new forms of information distribution.
- SARS also demonstrated that China’s information control policies can have a direct effect on other countries. The failure of China to release complete and credible information about the health crisis hindered international efforts to combat the disease.

OVERVIEW

The Chinese government maintains significant controls on traditional information channels and is enhancing its resources to establish authority over new media. As a result, the government continues to possess a disconcerting capacity to influence the opinions and perceptions of its citizens.

The Commission's 2002 Report to Congress focused on the depiction of the United States and its policies in Chinese media and Chinese government statements.¹ The work of the Commission during this reporting cycle explored the capacity of the Chinese government to control the information available to its citizens. We evaluated the success of China's information control efforts and therefore China's ability to influence and control perceptions of the United States, examined whether China's policies in this regard have intensified or relaxed over the past year, and assessed the actions that the United States can pursue to reduce the effectiveness of China's information control policies.

The Commission held a hearing on June 5, 2003, to examine Chinese government efforts to control information flows and the media, particularly in the context of the SARS crisis, and to assess U.S. government and private sector efforts to bring reliable news to the Chinese public and to overcome government censorship. The hearing featured witnesses from the U.S. International Broadcasting Bureau, Voice of America (VOA), and Radio Free Asia (RFA) and outside experts on China's media control efforts, with a focus on those directed toward the Internet. The Commission also continued its work in translating articles from influential publications within China discussing Beijing's economic and security strategies and perceptions of the United States, which are published on our Web site.

The Commission's 2002 Report to Congress summarized the findings of a Commission-sponsored study of how China's official news media portrays the United States and its policies. The Commission's continuing work in translating important Chinese publications has reinforced the study's findings that the Chinese population is exposed to a uniform and consistent message that is critical of U.S. foreign policies and intentions in Asia.

ANALYSIS AND FINDINGS

China's Media Control Efforts

The Chinese government actively seeks to control the information to which its citizens have access. The past year witnessed both bright and dark spots for the scope of media freedom. The SARS crisis demonstrated both the extensive efforts China's authorities undertake to control news of topics deemed sensitive as well as the limits of such censorship, given the Chinese population's growing access to the Internet and other new forms of media. Though Reporters Without Borders' 2003 report notes that some topics formerly prohibited from discussion in the Chinese media are now allowed, foreign and domestic journalists continue to confront government obstacles to reporting on a variety of subjects.² Moreover, because China allows hotels primarily used by foreign guests to

maintain access to foreign news sources, foreign visitors to China are unlikely to realize the extent of government censorship.

Chinese citizens who are unable to give voice to their concerns have resorted to desperate acts. For example, in March 2003, Fang Qinghui used a fake bomb to hold a local Reuters office hostage in order to have a public outlet for his concerns with corruption and unemployment.³

In one recent example of information control, Vice President Richard B. Cheney's April 2004 speech in Shanghai, broadcast live on Chinese television, was revised to remove mentions of political freedom and Taiwan when the Chinese government released a transcript.⁴ China's information control stretches beyond news to include art and history as well. For instance, Senator Hillary Rodham Clinton's published memoir was selectively edited to remove portions speaking of human rights violations in China.⁵ Moreover, China's WTO accession agreement stipulates that China will allow only twenty foreign films per year to enter the market. Through the China Film Group, the Chinese government controls which films are selected for importation. The government can therefore choose which cinematic content it allows into the country.

The media control strategy of the Chinese government relies on making examples of a select few journalists or publications, which receive harsh punishments for vaguely defined crimes. As a result, remaining media outlets generally engage in self-censorship. Because the line between acceptable and unacceptable news is never well defined, those wishing to stay on the safe side seek to avoid any story that seems even questionable.⁶

The public's access to information can often play a role in public health issues. China adopted a new AIDS prevention strategy in December 2003, which contains efforts to increase public awareness and knowledge but notably does not include any broader intention to ease state controls on information. In light of this, the Commission recommended that Congress urge China to incorporate into its new AIDS strategy provisions for moving toward a free press and unobstructed public access to the Internet.⁷ China's recent history is not promising in this regard. China arrested prominent AIDS activist Wan Yanhai in September 2002 for posting AIDS-related information on the Internet. He was detained for more than a year, until the government had extracted a confession to the charge of exposing state secrets. Wan's organization remains banned.⁸

In fact, China continues to jail Internet activists for a variety of causes. As just a few examples, Du Daobin was imprisoned for months before being charged in February 2004 with "inciting subversion" by posting calls for democracy online.⁹ Four students were each given eight to ten years in prison in May 2003 for "subverting state secrets" by posting political essays on the Internet.¹⁰ Zhang Shengqi was arrested in November 2003 for posting reports of government repression of members of the Catholic Church. He was tried in secret in March 2004 for "divulging state secrets," along with Xu Yonghai and Liu Fenggang, who helped with the reports.¹¹

Expanding Media: The Internet and Mobile Phones

The government's treatment of traditional media in China has not fundamentally changed in recent years. The same methods are

used, and the news media respond in the same manner—at times challenging and at times acquiescing. A growing factor in the flow of information is the Internet, with Chinese users expanding rapidly. China's Internet users jumped from thirty-four million to fifty-nine million over the course of 2002, and at the close of 2003 the number was reportedly nearing eighty million.¹²

Because of the difficulty in controlling the Internet, Chinese users are able to access “a much broader range of news and opinion than they get from traditional media.”¹³ Nonetheless, the Chinese government attempts to exert control over the Internet and its usage by employing both old and new tactics. As with traditional media, select individuals are punished as a warning to others.

At the same time, the government is working to develop a more systematic control over the Internet and has developed extensive human and technological resources for monitoring and censoring content on the Internet.¹⁴ The Chinese government is expanding its capability to trace Internet activity back to identifiable individual users. Additionally, while the opaque nature of China's security forces precludes an exact accounting, it has been estimated that China's Ministry of Public Security maintains a force of thirty thousand people solely tasked with tracking down Internet dissidents as part of the “Golden Shield” project.¹⁵

The government uses filtering and blocking technology to deny users inside China access to selective Web sites such as those of foreign news, human rights groups, and anything else deemed objectionable. In the past two years, this technology and the methods in which it is employed have grown more sophisticated¹⁶ and in some cases have involved technology developed by U.S. firms.¹⁷ China's censors sometimes attempt to block a Web site temporarily and sometimes attempt to maintain the block permanently. Individuals inside and outside of China are often able to circumvent the firewall that impedes access to such sites, if they take proactive measures and possess a basic competency in operating computer systems. The technologies employed by both sides result in a cat-and-mouse game where no firewall or circumvention is permanent, but Internet users who do not attempt to circumvent the firewall find their access to information further constricted after each iteration.

Cell phones are another rapidly expanding medium for the flow of information. China has more cell phones in use than the United States, with 277,000,000 in January 2004.¹⁸ Increasingly, cell phones are equipped with the capacity to send short text messages to a distribution list of other cell phones. The text messaging function of cell phones is used extensively in China, and thus represents a rapidly expanding method of interpersonal communication. Chinese cell phone users sent 15.6 billion text messages in January 2004 alone, an average of nearly two per day by each cell phone user.¹⁹ During the SARS epidemic, these text messages became an important and often uncensored source of information. However, the Chinese government is technically capable of monitoring such messages.²⁰ The development of the Chinese government's monitoring of text messages is an area deserving greater U.S. attention.

U.S. Anticensorship Efforts

With Radio Free Asia and Voice of America broadcasts, the United States has programs in place to provide alternative news and information to some areas of China. U.S. government Web sites, including RFA and VOA, also attempt to provide news to interested Chinese citizens. However, the Chinese government “regularly jam[s] all of the Voice of America and Radio Free Asia radio programs, in clear violation of accepted international rules and regulations followed by almost all other nations.”²¹ To jam radio broadcasts, China broadcasts its own transmissions on the same frequencies. Jamming is not always successful, depending on the location of the listener, the respective strength of the competing signals, and the number of frequencies on which RFA and VOA simultaneously broadcast the same signal. Despite the Chinese government’s extensive jamming efforts, RFA and VOA signals still reach a portion of their intended audience.

China also frequently denies visas to journalists of U.S. government-sponsored news organizations, despite the ease with which journalists of Chinese state publications are able to obtain U.S. visas. China maintains more than forty government journalists in the United States, while the VOA has two in China, and the RFA none.²²

The addition of the Internet to traditional media of information has reconfigured what was a fairly stable system of information repression by the Chinese government. U.S. government Web sites and some private firms are continually seeking to develop methods to circumvent China’s extensive Internet censorship. The Broadcasting Board of Governors (BBG) has a division devoted to anticensorship programs.²³ Private companies in the United States are also working on methods for allowing Internet users in China unfettered access to the Internet and are confident in their systems’ success. Some of these companies claim to already have the “anticensorship technology to do that, and ... just need additional funding.”²⁴

Support for Internet Anticensorship

For several years, the Global Internet Freedom Act has been under consideration by Congress. The House version of this bill was incorporated into the Foreign Relations Authorization Act as passed in 2003, but this legislation was not included in the version passed by the Senate. The bill would establish an Office of Global Internet Freedom tasked with combating Internet censorship worldwide, including through the development of anticensorship technologies. The office would also report annually to Congress on the status of foreign government control of the Internet. The Commission believes that such a coordinated effort by the U.S. government is needed to combat this practice in China and elsewhere.

In June 2003, the Commission recommended to Congress that it provide the BBG with funding targeted for China Internet anticensorship programs. The 2004 Omnibus Appropriations Act allocated \$1 million for the BBG to administer a pilot program for this effort. The resulting program cooperates with private sector actors to disrupt China’s blocking and tracking activities, allowing Chinese Internet users unrestricted Web access.

The Lessons of SARS

Background—The Nexus Between Public Health and Freedom of Information

SARS was officially acknowledged by China in February 2003, though cases are believed to have appeared in southern China in late 2002. The World Health Organization (WHO) classified more than eight thousand cases of the illness through July 31, 2003, with almost eight hundred deaths; the majority of the cases occurred in China.²⁵ The Chinese government initially reacted to SARS by suppressing all information regarding the epidemic. The outbreak provided an unusual opportunity to gain insight into China's information control goals and methods.

The Chinese government thoroughly suppressed coverage of the initial outbreak of SARS, closing publications such as *The 21st Century World Herald* and *China Newsweek* for releasing information on the outbreak. Also in late 2002, the government noticeably increased control over the topics and perspectives reported by news outlets during the transition period in the country's leadership. The government was compelled to dramatically reverse its policies on censoring information about SARS in April 2003 once facts about the true extent of the epidemic began spreading via the Internet and cell phone text messaging, despite the government's censorship efforts. Even after the April policy shift, however, individual reporters remained under a nebulous threat of jail time or job loss for covering disapproved subjects, and several of their colleagues continue to languish in prison for such offenses.

Were a similar health crisis to recur in China, the government may be less successful in initially containing the information. Under World Health Assembly mandates existing during SARS, China was not technically required to report the SARS outbreak to the WHO. Reporting is only mandatory in the case of a small number of named infectious diseases. The PRC Ministry of Health did send reports to WHO on February 11 regarding an outbreak of atypical pneumonia (as SARS is known in China) in Guangdong. Still, China's often inconsistent and reluctant response to WHO concerns certainly influenced the World Health Assembly's May 28 decision to adopt a resolution confirming WHO's authority to determine the severity of disease outbreaks through on-the-spot investigations, with or without the invitation of the host country.²⁶

Information Control During the SARS Crisis

One common view of China's information flows during the early stage of the SARS crisis is that "China's control of information was absolute."²⁷ News did eventually trickle out to international media, however, which led to international pressure on China to provide an open account of the outbreak. Additionally, cell phone text messages and more traditional forms of communication spread news and rumors, while international radio broadcasts and Web sites supplied information to those capable of access. It is more accurate, then, to say that the Chinese government attempted to control all information media during the early stages of the SARS crisis and met with substantial but neither complete nor enduring success.

The reversal of policy in managing the SARS crisis by President Hu Jintao and Premier Wen Jiabao began in April 2003, suggesting to many observers that SARS would be an early and decisive test for these two new political leaders. Hu and Wen acted in the wake of international news stories reporting the accusations of a doctor from a Beijing military hospital that the minister of Health and the Beijing City government had wildly understated the number of SARS patients in the capital. Shortly afterwards, the Chinese government's policy responses to the SARS epidemic were in many ways reversed.

Hu and Wen led the nine-member Communist Party Politburo Standing Committee to approve the April 20 dismissal of Health Minister Zhang Wenkang and Beijing Mayor Meng Xuenong and encouraged quieter dismissals of dozens of local officials in affected provinces. They placed Vice Premier Wu Yi in charge of the Health ministry and the national fight against SARS. They extracted a rare public apology for the SARS cover-up from the Beijing party secretary, Liu Qi, who was allowed to remain in office, and ordered public health officials to cooperate with WHO investigators and fully report SARS cases within government channels.

Implications for Future Behavior of China's Government

SARS has now subsided, and the remaining question is whether the Chinese government has fundamentally changed its perspective on matters of information control, particularly regarding public health issues, or if it was merely forced into greater transparency by unusual circumstances and international concern. The Commission heard from U.S. officials and others who study China's censorship efforts who believe that the post-April openness of China's government was an aberration and that China would react to any new situation with a similar blocking of domestic reporting.²⁸

Those more attuned to China's ongoing economic reforms believe that the Chinese government has realized that its interest lies in protecting public health and avoiding any disruptions in international business flows. Because they see that the Communist Party's legitimacy is no longer based on ideological support but on economic growth, such observers expect that SARS has produced a fundamental change in China's information control strategy.²⁹

Given China's formal acceptance of open reporting on purely business issues in the late 1990s,³⁰ one other possibility is that China will loosen restraints on media reports covering public health issues without changing its broader stance on media control. In practice, China has returned to aggressive information control practices in the months following the SARS crisis, arresting Internet users with pronounced religious or political views.

Because China continues to selectively censor news and other information, it is capable of shaping the perceptions of its populace, particularly regarding the United States and its policies. This represents a subtle but pernicious form of propaganda. As compared to overt government statements, selective censorship leaves Chinese citizens with the belief that their opinions of the United States were independently and reasonably formed, making such misperceptions more difficult to correct.

The Effects of International Pressure

An important matter for U.S. policy is whether China's loosening of information control relating to SARS was a result of domestic or international pressures. Some witnesses at the Commission's hearing attributed the change to a policy of openness to outside economic and diplomatic pressures. For instance, Dr. Maochun Yu spoke of the Chinese government in saying that "unless you have a very strong external pressure on it, the government cannot itself reform."³¹ Others, however, argued that internal pressures are also very important as a result of the unwavering priority that the Chinese government gives to domestic political and social stability. The consensus held that U.S. and international pressure are able to impact significantly the information control behavior of China's government.

The SARS experience also has implications for international news outlets in China. Many Chinese turned to American government news sources such as the RFA or VOA for reliable information during the crisis, despite the efforts of the Chinese government to jam transmissions and block Web sites.³² Previously, the average Chinese citizen was likely to believe that international media are disreputable and generally given to unfair treatment of China. Because of the events surrounding SARS, many of these same individuals now see international news as more credible, becoming both avid consumers of its news on SARS and more willing sources of information for international journalists in China.³³

RECOMMENDATIONS

- On June 30, 2003, the Commission recommended that Congress direct the Broadcasting Board of Governors to target funds for efforts aimed at circumventing China's Internet firewall through the development of anticensorship technologies and methods. Congress approved such funding as part of the 2004 Omnibus Appropriations Act. The Commission recommends that Congress continue this program with enhanced resources, pending successful results for the current fiscal year.
- As recommended in the Commission's 2002 Report, the Commission reiterates that Congress should direct the Department of Commerce and other relevant agencies to conduct a review of export administration regulations to determine whether specific measures should be put in place to restrict the export of U.S. equipment, software, and technologies that permit the Chinese government to surveil its own people or censor free speech.
- The Commission recommends that Congress approve legislation to establish an Office of Global Internet Freedom within the executive branch, tasked with implementing a comprehensive global strategy to combat state-sponsored blocking of the Internet and persecution of users. The strategy should include the development of anticensorship technologies.
- The Commission recommends that Congress encourage the administration to press China to freely admit U.S. government-sponsored journalists, such as those representing the Voice of America and Radio Free Asia. China frequently denies visas for such journalists, despite the fact that China's state-sponsored journalists are freely admitted in the United States. Options

should be considered for linking Chinese cooperation to concrete consequences, including the possible use of U.S. visas for Chinese government journalists as leverage to gain admission of more U.S. government-supported journalists to China.

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ADDITIONAL VIEWS OF COMMISSIONER PATRICK A. MULLOY

Reaching agreement on a Report such as this requires that each Commissioner not insist on his or her preferred wording for every paragraph or phrase. By working together, and with the help of able staff, we have achieved a unanimous, bipartisan, consensus on the complex issues we were charged by Congress to address. There are, however, two issues about which I feel compelled to make my own views absolutely clear because of their importance to our nation's welfare.

The first deals with the security relationship among the United States, Taiwan, and the People's Republic of China (PRC), which our governing statute charged us to examine. Commentators on this three-part relationship often assume that the United States is already committed to use our forces to assist in Taiwan's defense if the latter were attacked by the PRC. This is not the case.

The Joint Communiqué issued by the United States and the PRC at the conclusion of President Nixon's historic visit to that country on February 28, 1972, stated in part: "The United States acknowledges that all Chinese on either side of the Taiwan Strait maintain there is but one China and that Taiwan is a part of China. The United States government does not challenge that position." On January 1, 1979, in the Joint Communiqué issued by the government of the United States and the government of the PRC on the Establishment of Diplomatic Relations, the United States recognized the government of the PRC as the sole legal government of China, and it acknowledged the Chinese position that there is but one China and Taiwan is part of China.

Within that context, the two sides agreed that the people of the United States would continue to maintain cultural, commercial, and other unofficial ties with the people of Taiwan. On this basis, relations between the United States and China were normalized. Our government then abrogated the United States-Republic of China (Taiwan) Defense Treaty. The 1979 Communiqué was issued when President Carter was in office. The above description of what the 1979 Communiqué meant to accomplish is confirmed verbatim in the 1982 Joint Communiqué issued during President Reagan's first term. The latter Communiqué reiterates that the United States has no intention of pursuing a policy of "two Chinas" or "one China, one Taiwan".

On April 10, 1979, the Taiwan Relations Act was signed into law, and among other things, it sets forth U.S. national policy regarding the security of Taiwan. It states "any effort to determine the future of Taiwan by other than peaceful means" would be "of grave concern to the United States." It further states that it is U.S. policy "to provide Taiwan with arms of a defensive character" and "to

maintain the capacity of the United States to resist any resort to force” with regards to Taiwan.

Significantly, the Taiwan Relations Act makes no commitment to have U.S. forces defend Taiwan. Rather it provides that the President is directed to inform the Congress promptly:

Of any threat to the security or the social or the economic system of the people of Taiwan, and any danger to the interests of the United States arising there-from. The President and Congress shall determine, in accordance with constitutional processes, appropriate action by the United States in response to any such danger.

This is an important distinction that the United States has used to maintain a policy of “strategic ambiguity” with regard to whether it would employ American forces to help defend Taiwan from an attack by the PRC. The United States has always recognized that if Taiwan believed that our commitment to its security was without limits, it might be emboldened in its dealings with the PRC perhaps to the point of provoking a conflict, by among other things, moving toward an independence that our government does not support.

In a March 2, 2004, speech to the Heritage Foundation, Secretary of State Colin Powell stated, “We adhere firmly to our One-China policy as defined by the three communiqués and the Taiwan Relations Act. We do not support Taiwan’s independence and we oppose moves by either side to unilaterally change the status quo.” While the United States does want to assist Taiwan in preserving its thriving democracy and robust economy, it is necessary for the governing authorities on that island to fully recognize the parameters of our commitment to them under the Taiwan Relations Act and the three Communiqués.

The other matter I want to highlight is the Commission’s finding in Chapter 7 that the Chinese government has instituted policies to accelerate the growth of its high technology industries whose growth, that government believes, can help lift the whole economy. While China cannot be faulted for instituting policies that do not violate its WTO and other trade agreement obligations, we, as a nation, must ensure that the growth of China’s high tech economy does not result in the deterioration of our own. That is why the Commission has recommended that our government develop a coordinated, comprehensive, national policy and strategy to maintain our own scientific and technological leadership.

Such a strategy must be multifaceted including, among other things, increased emphasis on science education, modernizing our nation’s infrastructure, vigorously enforcing our trade laws and agreements, providing real retraining for displaced workers, increasing funding incentives for the development of possible breakthrough technologies, and ensuring we have an international financial architecture that does not undermine our manufacturers through exchange rate misalignments. Developing and implementing such a policy is, in my view, a key challenge for our nation and ultimately the standard of living of our citizens and our national security will be dependent on how we meet it.

ADDITIONAL VIEWS OF COMMISSIONER WILLIAM A. REINSCH

Although this Report has a number of troubling elements, I have decided to sign it, largely in recognition of the progress the Commission has made since its first Report in moving toward balance and objectivity. While the first Report merrily drove off the credibility cliff at a high rate of speed, this one teeters on the edge but ultimately pulls back from disaster, at least with respect to its recommendations. That means my support for this document is based largely on the bad things that are missing from it rather than the good things that are in it. Even so, the progress in muted rhetoric and not unreasonable recommendations is noteworthy, and I hope my support this year will encourage the Commission to do even better next time.

On the plus side, the Report avoids much of the excessive verbiage and sweeping judgments that compromised the 2002 Report. As a consequence, this Report has fewer rhetorical excesses and is more focused on matters within the Commission's purview.

Second, the hearings on which the Report is based were balanced. Unfortunately, that balance is not fully reflected, as the Commission majority has chosen to continue its habit of selective quotation, but the Chairman deserves to be commended for his efforts to ensure varied points of view were presented in testimony.

Third, a number of the less well-considered recommendations from 2002 are not repeated, and, in the interest of not disturbing the hopefully dead, I will not resurrect them here.

Fourth, a number of the recommendations are thoughtful and validate the policy of constructive engagement that I believe to be correct.

Despite these improvements, the Report contains serious flaws.

- 1) The tone of the Report continues its predecessor's focus on the negative. In short, the indictments of China keep changing, but the verdict is always the same—guilty. The Report's perspective is simple and simplistic: we are right; China is wrong; the only issue is how to force them to do what we want.

There are some circumstances—human rights, worker rights, nonproliferation—where Chinese behavior is clearly outside the norm, and a strong, principled U.S. position is appropriate, although the Commission majority's assumption that unilateral action by the United States can solve these problems is naive.

In other areas however, particularly economic and trade policy and cross-Straits issues, "right" and "wrong" are murkier. The Chinese are pursuing policies they believe are in their interest, many of which appear to be actually working, in contrast to some of our own economic policies. To the extent they are violating WTO rules or other treaties or are not fulfilling obligations they have undertaken, it is appropriate for us to act, and the Report properly takes note of those circumstances. In my judgment, however, the Report grossly overestimates the ability of the United States, acting by itself,

to pressure the Chinese to alter their course. It will take patience, subtlety and diplomatic creativity more than the ham-handed use of “leverage” advocated in this Report to achieve that result.

To be more specific, with respect to the exchange rate issue, the Report avoids arbitrary or provocative recommendations but steps up to the brink in its assumption that the United States can somehow force the Chinese to revalue. The Report’s fondness for legislated or juridical solutions is ill-suited to the nuanced world of exchange rates. Likewise, the section on Chinese involvement in Western capital markets usefully focuses on an issue that is growing in importance and again avoids over the top recommendations, but the clear implication is that the government ought to be doing more to influence or limit investor choices, despite evidence that the market itself appears to be addressing the problem.

Similarly, the chapter on nonproliferation gives China too much responsibility for solving the situation in North Korea and takes too little note of the failures of U.S. policy over the past three years.

- 2) The Report is deficient in its treatment of China’s domestic economic problems. The bulk of the economic section deals with Chinese actions that disadvantage the United States and increase our bilateral deficit. While individual domestic problems, such as bad bank loans and growing inflation, are mentioned, there is little effort to place them in a larger context and evaluate their likely impact on the bilateral relationship. The implicit—and simplistic—assumption is two straight lines—China is growing stronger while the United States grows weaker. This may well turn out to be true, but many of us said the same thing about Japan and the United States in the late 1980s. Having been proved wrong once, I am more skeptical than my colleagues that they will be right this time. In particular, the Report virtually ignores growing signs of internal economic difficulties that could seriously compromise growth and create internal economic and political crises that would at best preoccupy and at worst directly threaten the current government.

- 3) The Report makes a number of recommendations which I strongly oppose, but space permits listing only two:

The recommendation for additional sanctions legislation (Chapter 5) is entirely unnecessary and inappropriate. More than adequate authority to impose sanctions already exists, making the recommendation unnecessary, and the uniformly poor record of sanctions in accomplishing their objectives makes it unwise.

The recommendation for retaliation against companies that sell weapons-related items to the Chinese (Chapter 8) could have serious adverse implications for NATO interoperability and transatlantic defense cooperation were the EU arms embargo to be lifted.

Despite these objections and misgivings, I have decided to sign the Report, in significant part to acknowledge the Commission's rejection of so many of the unwise recommendations it considered. I hope that in the next iteration we are able to move beyond the simplistic "we're right; they're wrong" approach and undertake more sophisticated analysis that better explains the complexities of the bilateral relationship and the long term implications for the United States of China's economic and political growth and development.

ADDITIONAL VIEWS OF COMMISSIONERS LARRY M. WORTZEL AND STEPHEN D BRYEN

We agree with the general thrust of this Report and the majority of its findings and recommendations. However, we find its approach to foreign trade and commerce to be far too protectionist. Further, while we agree with the general approach to assessing the relationship between high technology trade and security, we believe that more attention needs to be paid to the specific improvements in Chinese defense-related products that flow from the trade in dual use (civil-military) items that are covered by the Export Administration Act (EAA).

The tone of the discussion of job growth and the effect of the globalization of industrial production on the United States needs correction in our view. The term “a jobless recovery” that appears several times in the Report is partisan and both emotionally and politically loaded. It is also factually incorrect. A “jobless recovery” is a myth that masks the strength of the American economy and its flexibility.

The assertion in the Report that job growth is not taking place rests on a single measure, total non-farm payroll employment as measured by the U.S. Department of Labor’s payroll survey. As The Heritage Foundation pointed out in its May 13, 2004, Backgrounder #1757, “jobless claims are now 10 percent below the 25 year average.” Additionally, the household survey, which is the only direct employment survey of Americans, shows that “2.2 million more Americans are employed now than were employed in November 2001.” The U.S. labor force has grown by 2.3 million people since November 2001, showing real gains in employment even while the size of the labor force is growing.

It is true that there is significant dislocation of the U.S. labor force as a result of structural change in the U.S. economy. But even net jobs may be gained as a result of outsourcing. According to a March 30, 2004 study by Global Insight (USA) Inc., also cited the Heritage Backgrounder #1757, “the incremental activity that follows offshore information technology outsourcing created over 90,000 net new jobs in 2003, and is expected to create 317,000 net new jobs in 2008.” To take advantage of these new employment opportunities, however, means that workers may need new training and education and may have to relocate.

“Insourcing” of new jobs into the United States is also taking place as a result of the globalization of manufacturing. As cited in the same Heritage Foundation paper, “according to the Organization for International Investing, over the last 15 years ‘insourced’ jobs grew by 82 percent, at an annual rate of 5.5 percent, and manufacturing ‘outsourced’ jobs grew by 23 percent, at an annual rate of 1.5 percent.” There are 14,000 workers employed at Honda plants in Ohio and 4,300 workers at the BMW factory in South Carolina. Michigan has 244,200 ‘insourced’ workers, Ohio has 242,200, and Idaho has 13,900 ‘insourced’ jobs.

It is also important to consider that labor dislocation because of structural changes in the economy is not unique to the United States. While U.S. manufacturing jobs have declined by eleven per-

cent between 1995 and 2002, China has lost fifteen percent of its industrial jobs in the same time frame. The loss of 2.45 million manufacturing jobs, which is the current rate in the United States, are about the same as the losses the United States experienced between 1979 and 1982. General employment in the United States recovered when new American companies created new jobs in new sectors of the economy.

Jobs can be created in the United States, and foreign companies attracted to the United States creating “insourced” jobs, by reducing frivolous lawsuits against manufacturers and products, eliminating burdensome taxes and regulations in localities and states, simplifying the tax code, and ensuring affordable energy supplies.

The Report is also too protectionist and some of its recommendations too quick to suggest broad government sanctions on trade. Every American has the power to sanction China, or any other country, in his or her pocket by exercising choice in the marketplace. By refusing to purchase goods from specific manufacturers or countries Americans can deliver a powerful message that they want different suppliers. Concerned citizens or interest groups must educate the American public if they want action. Of course, for a short period of time a consumer may have to pay more for an item or do without certain items until the marketplace adjusts.

Finally, the Report has devoted too little attention to the need to revise the Export Administration Act (EAA), which controls the export of dual use (civil-military) items and technologies. The Commission should study the effect of dual use technology transfers to China on defense production there and how Chinese defense industry has managed to improve the military as a result of those dual use transfers. The EAA has not been updated since 1979, thus law and regulation have failed to keep up with globalization and advances in technology. Congress must tackle that task.

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